lakhs to Rs. 1.00 crore per MW depending upon the end-use requirement of thermal energy or captive power, and the technology configuration.

(c) The scheme is applicable to all the States and Union Territories including the State of Tamil Nadu.

Achievements of non-conventional energy sources

†455. SHRI MANGANI LAL MANDAL: Will the Minister of NON-CONVENTIONAL ENERGY SOURCES be pleased to state:

(a) whether it is a fact that the country has immense potential of non-conventional energy sources; and

(b) if so, the comprehensive details of Government's ambitious plant to harness various sources of non-conventional energy during the Tenth and Eleventh Five Year Plans alongwith its generation achievements?

THE MINISTER OF STATE OF THE MINISTRY OF NON-CONVENTIONAL ENERGY SOURCES (SHRI VILAS MUTTEMWAR): (a) A potential of around 2,00,000 MW in the medium-term (2032) from various non-conventional energy sources such as wind, small hydro and bio-energy has been estimated in the country, as per the details given in the Statement (*See* below).

(b) The aim is to deploy around 10 per cent of the additional power generation capacity to be set up in the country during the Tenth and Eleventh Plan periods corresponding to around 10,000 MW through renewables. During the first 3 years and 9 months of the Tenth Plan (2002—2007) over 15 per cent of the total capacity addition corresponding to around 3,600 MW has come through renewables, against a target of 3075 MW for the entire Tenth Plan period.

† Original notice of the question was received in Hindi.

Statement

Details of Estimated Medium-term(2032) Renewable Energy Potential

Sl. No.	Resource		Indicative Estimated Potential	Actual Cumulative Achievements as on 30.09.2005
A.	Renewable Power:			
I.	Grid-Interactive Renewable Power			
1.	Bio Power (Woody biomass)	(in MW)	62,000[1]	342.00
2.	Wind Power	-do-	<45,000[2]	4228.00
3.	Small Hydro Power (upto 25 MW)	-do-	15,000	1729.23
4.	Cogeneration-bagasse	-do-	5,000	463.00
5.	Waste to Energy	-do-	5,000	45.43
6.	Solar Power	-do-	40,000[3]	2.64[4]
	Grid-Interactive Renewable Power-Sub-Total	(in MW)	172,000	6810.50
II	Distributed Renewable Power			
7.	Distributed Renewable Power-Rural	(in MW)	30,000[5]	68.00
8.	Captive generation-industrial, commercial	-do	20,000[6]	
	Distributed Renewable Power-Sub-Total	-do-	50,000	68.00
III.	Renewable Power-Total		222,000	6878.50

MW=Megawatt; sq. km. = square kilometer

Note:—Basis for deriving the Indicative Estimated Potential:

1. from plantations on 25 million ha. of waste-lands yielding on average 10 MT/ha/annum of woody biomass of calorific value 4000 k-Cal/kg. with system conversion efficiency of 35% at 75% Plant Load Factor (PLF). If any of the assumptions made herein were not to hold, the estimated potential would get modified accordingly. Furthermore, in order to realize the estimated potential a major inter-Ministerial initiative involving, among others, Agriculture, Rural Development, Panchayati Raj, Environment & Forests would be required.

2. sites with wind densities of 250 W/m^2 or higher with 3% of assessed area available for wind farms requiring 12 ha/MW. The feasible potential for grid-interactive power could be lower if sites with wind densities of 300 W/m^2 or higher are considered as suitable in keeping with international norms.

3. @30MW/sqkm based on average insolation of 6k Wh/,m^2/300 days/annum, an area of 1333 sq. km. would be required.

4. programme discontinued as SPV grid-interactive power costs over Rs. 20/kWh and around Rs. 30/kWh with battery back-up.

5. one-half installed capacity from 60MMT/annum out of the 150 MMT/annum of the estimated surplus agricultural and forest residues and the other half from 40 MMT/annum of woody biomass from 4.0 million ha. wastelands out of 25 million ha. as given in (1) above with system conversion efficiency of 21.5% at 30% PLF.

6. one-half installed capacity from 10 MMT/annum could pressed vegetable oils from 8 million ha. wastelands @ 1.25 MT/ha/ annum with transesterification system efficiency of 85%, system conversion efficiency of 35% and the other half from 46.6 MMT woody biomass from plantations on 4.66 million ha. wastelands and/or croplands with system conversion efficiency of 21.5% at 30% PLF.